

FFAF05U120DN

Features

- High voltage and high reliability
- High speed switching
- Low forward voltage

Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits



ULTRA FAST RECOVERY POWER RECTIFIER

Absolute Maximum Ratings (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Peak Repetitive Reverse Voltage	1200	V
$I_{F(AV)}$	Average Rectified Forward Current @ $T_C = 100^\circ\text{C}$	5	A
I_{FSM}	Non-repetitive Peak Surge Current 60Hz Single Half-Sine Wave	30	A
T_J, T_{STG}	Operating Junction and Storage Temperature	- 65 to +150	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{\theta JC}$	Maximum Thermal Resistance, Junction to Case	3.4	$^\circ\text{C}/\text{W}$

Electrical Characteristics (per diode) $T_C=25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Min.	Typ.	Max.	Units	
V_{FM}^*	Maximum Instantaneous Forward Voltage $I_F = 5\text{A}$	$T_C = 25^\circ\text{C}$	-	-	3.5	V
		$T_C = 100^\circ\text{C}$	-	-	3.2	
I_{RM}^*	Maximum Instantaneous Reverse Current @ rated V_R	$T_C = 25^\circ\text{C}$	-	-	5	μA
		$T_C = 100^\circ\text{C}$	-	-	600	
t_{rr}	Maximum Reverse Recovery Time	-	-	100	ns	
I_{rr}	Maximum Reverse Recovery Current	-	-	7	A	
Q_{rr}	Maximum Reverse Recovery Charge ($I_F = 5\text{A}$, $di/dt = 200\text{A}/\mu\text{s}$)	-	-	280	nC	
W_{AVL}	Avalanche Energy	1.0	-	-	mJ	

* Pulse Test: Pulse Width=300 μs , Duty Cycle=2%

Typical Characteristics

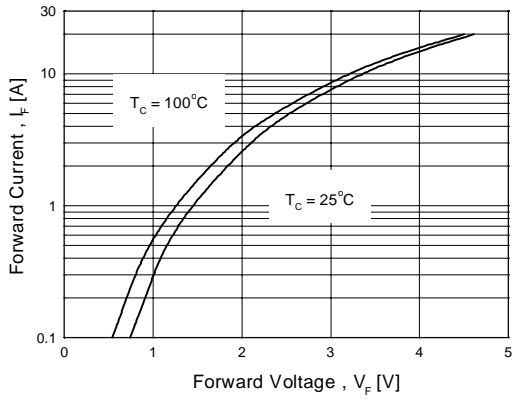


Figure 1. Typical Forward Voltage Drop vs. Forward Current

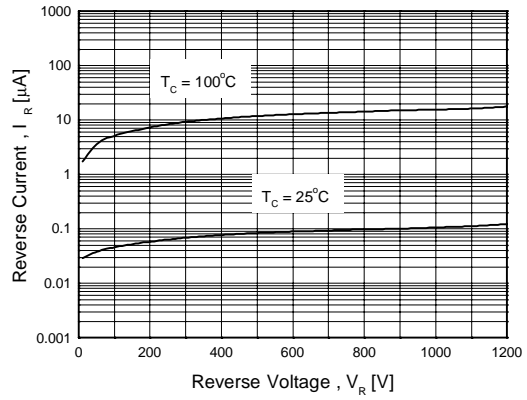


Figure 2. Typical Reverse Current vs. Reverse Voltage

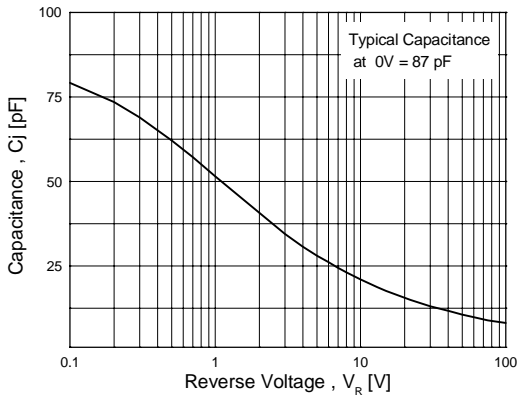


Figure 3. Typical Junction Capacitance

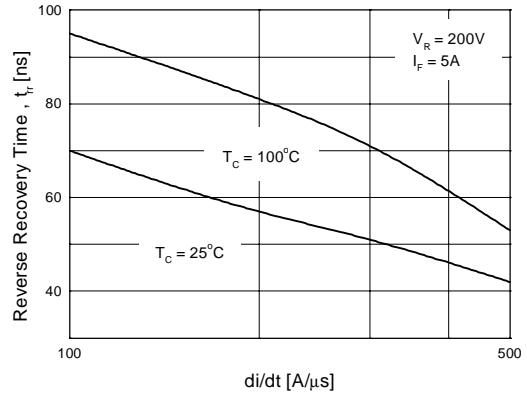


Figure 4. Typical Reverse Recovery Time vs. di/dt

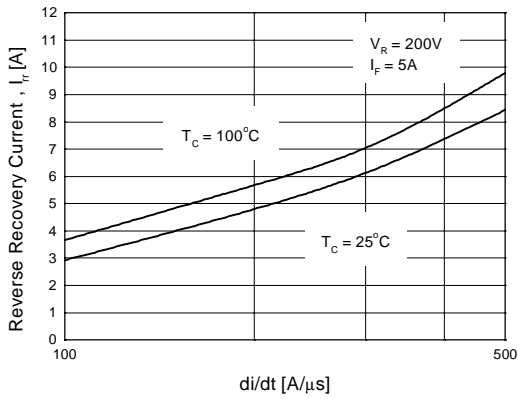


Figure 5. Typical Reverse Recovery Current vs. di/dt

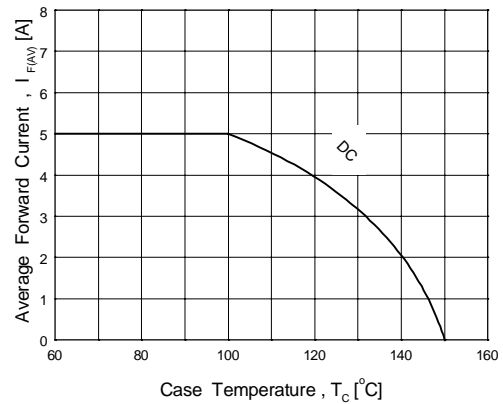
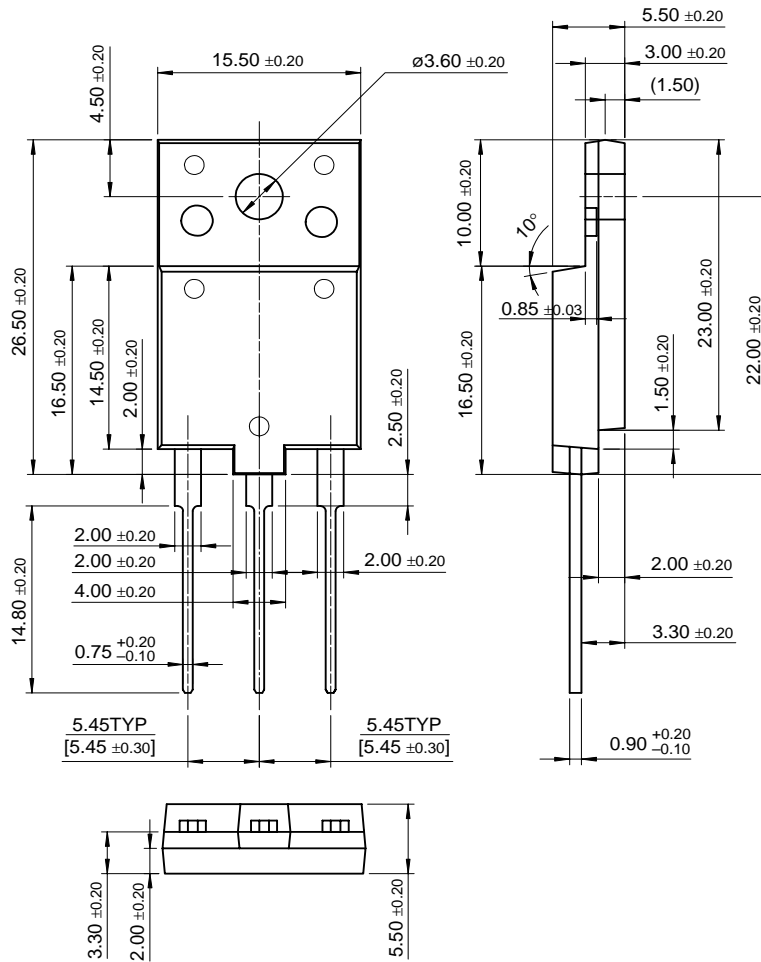


Figure 6. Forward Current Derating Curve

Package Dimensions

TO-3PF

FFAF05U120DN



Dimensions in Millimeters

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PRODUCT STATUS DEFINITIONS

Definition of Terms

Datasheet Identification	Product Status	Definition
Advance Information	Formative or In Design	This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.
Preliminary	First Production	This datasheet contains preliminary data, and supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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FFAF05U120DN
5.0A/1200V Ultra Fast Recovery Rectifier

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- High Voltage and High Reliability
- High Speed Switching
- Low Forward Voltage

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Applications

- General Purpose
- Switching Mode Power Supply
- Free Wheeling Diode for Motor Application
- Power Switching Circuit

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Product status/pricing/packaging

Product	Product status	Pricing*	Package type	Leads	Packing method
FFAF05U120DNTU	Full Production	\$1.71	TO-3PF	3	RAIL

* 1,000 piece Budgetary Pricing

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